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# VICTORIAN ENTOMOLOGIST



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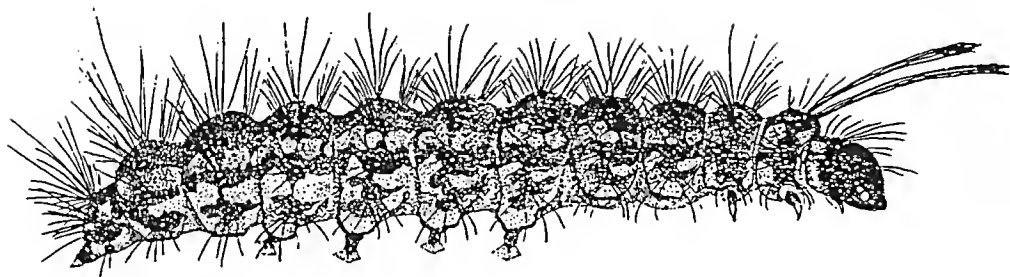
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*News Bulletin of The Entomological Society of Victoria Inc.*

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## THE ENTOMOLOGICAL SOCIETY OF VICTORIA (Inc)

### MEMBERSHIP

Any person with an interest in entomology shall be eligible for Ordinary membership. Members of the Society include professional, amateur and student entomologists, all of whom receive the Society's News Bulletin, the Victorian Entomologist.

### OBJECTIVES

The aims of the Society are:

- (a) to stimulate the scientific study and discussion of all aspects of entomology,
- (b) to gather, disseminate and record knowledge of all identifiable Australian insect species,
- (c) to compile a comprehensive list of all Victorian insect species,
- (d) to bring together in a congenial but scientific atmosphere all persons interested in entomology.

### MEETINGS

The Society's meetings are held at room AG17, La Trobe University Carlton Campus, 625 Swanston Street, Carlton, Melway reference Map 2B E10 at 8 p.m. on the third Friday of even months, with the possible exception of the December meeting which may be held earlier. Lectures by guest speakers or members are a feature of many meetings at which there is ample opportunity for informal discussion between members with similar interests. Forums are also conducted by members on their own particular interest so that others may participate in discussions.

### SUBSCRIPTIONS

Ordinary Member	\$20.00
Country Member	\$16.00 (Over 100 km from GPO Melbourne)
Student Member	\$12.00
Associate Member	\$ 5.00 (No News Bulletin)

No additional fee is payable for overseas posting by surface mail of the news bulletin. Associate Members, resident at the same address as, and being immediate relatives of an ordinary Member, do not automatically receive the Society's publications but in all other respects rank as ordinary Members.

Cover design by Alan Hyman.

Cover illustration of Magpie Moth or Senecio Moth larvae, *Nyctemera amica*  
by Cait Symington.

## MINUTES OF THE GENERAL MEETING, 18 OCTOBER 1996

The President, A. Kellehear, opened the General Meeting at 8.03 pm

**Present:** L. Barrow, P. Carwardine, D. Dobrosak, I. Endersby, A. & E. Farnworth, A. Kellehear, M. Linger, R. MacPherson, B. Vardy.

**Visitors:** A. Dobrosak, R. Henman, V. MacPherson.

**Apologies:** D. & J. Holmes.

**Minutes:** Minutes of the 16 August General Meeting [*Vic. Ent.* 26(5):85] were passed (R. MacPherson/I. Endersby).

### Treasurer's Report:

The Treasurer reported that the Society's accounts were as listed in the Minutes of the Council meeting, 20th September 1996 [*Vic. Ent.* 26(5):86].

### Editor's Report:

The Editor reported that enough articles were in hand for the next issue of *Victorian Entomologist* but articles were needed for the February issue.

### Excursion Report:

The date and meeting time of the excursion to the Cranbourne Botanic Gardens were passed on to those present. D. Dobrosak informed the meeting that the Society had been successful in its application for permit to collect in National Parks. The Society's planned survey of the Kinglake National Park (advertised as 1 December 1996) will now be held on Sunday 8th December. The Editor will mail out the News Bulletin in late November allowing Victorian members adequate notice of the excursion. The local Ranger is supportive and keen to obtain the results of any survey which the Society may undertake. Please refer to page 122 for further information on this excursion/scientific survey.

### Correspondence:

- Permit to collect in National Parks from the Department of Natural Resources and Environment.
- Society for Insect Studies Circular No 56.
- Australian Entomological Society draft minutes if meeting 342 of Core Executive.

### General Business:

**Butterfly Software:** David Crosby contacted the President regarding the possible use of the Society's ENTRECS data for a CD ROM on Butterfly Distribution set up by Paul Gullan. The option of supplying this data was debated at the meeting with the following consensus:

- The supply of the data would allow the dissemination of information on insects to a wide audience e.g. Schools, and would meet three of the four aims of the Society (refer to the inside front cover of *Victorian Entomologist*).
- The dissemination of the information would increase public awareness of insects and hence help to conserve the insects and their environment.

- The Society should allow a period of several months for past contributors who did not want their data supplied to Paul Gullan to advise Council of their wishes. In this case the contributors data will be removed from the ENTRECS data prior to being supplied to Paul Gullan.

The President informed the meeting that the matter would be voted on at the next Council meeting.

**Legislation covering personal collection of Natural History items:** R. MacPherson requested information about the rules and legislation involved in collection of Natural History items. No one at the meeting could offer a definitive statement on this matter.

**Application for membership:** An application for membership from N. Archibold has been received by the Society.

**Science Talent Search Awards:** I. Endersby announced the winners of the Science Talent Search Competition of which the Society is a sponsor.

- Major Bursary: Dane Kleiner of Caulfield GS, Malvern Campus for "Fly Trap" - Research Section.
- Minor Bursary: Daniel Dyer of Roberts McCubbin PS for "Wasps & Apples" - Science Photography Section.

**Guest Speakers:** As advised in writing in the next week, due to an unfortunate set of circumstances, the speakers had arrived at the wrong address and were therefore not able to present their talk.

The meeting was closed by the President at 8.59 pm.

## MINUTES OF THE COUNCIL MEETING, 15 NOVEMBER 1996

The President, A. Kellehear, opened the General Meeting at 8.09 pm

**Present:** P. Carwardine, D. Dobrosak, I. Endersby, A. Kellehear, R. MacPherson.

**Apologies:** R. Field.

**Minutes:** Minutes of the 20 September Council Meeting [*Vic. Ent.* 26(5):86] were passed (I. Endersby/R. MacPherson).

### Treasurer's Report:

The Treasurer presented a statement of the accounts as of 15 November 1996: General Account: \$4,348, Awards Account: \$3,268 and Membership: 97 (I. Endersby/A. Kellehear).

### Editor's Report:

The Editor reported that the next issue of *Victorian Entomologist* would be mailed out in last week of November to inform readers of the excursion to Kinglake National Park on the 8th of December.

### Excursion report:

I. Endersby reported that three members turned up to the gardens. A report on the excursion is on page 116.

### Correspondence:

The following correspondence was received:

- Letter from Mike Coupar conveying apologies to member for not being able to present his talk on 18th October 1996.
- An updated list of Schedules 2 & 3 to the Flora and Fauna Guarantee Act 1988 from the Department of Natural Resources and the Environment.
- Letter from Dan Kleiner, thanking the Society for sponsoring his award in the Science Talent Search Competition.

### General Business

**Venues to Promote the Society - Garden World:** A. Kellehear reported that Garden World were generally supportive of the Society settings up a stand. Negotiations will continue.

**Venues to Promote the Society - Society for Growing Australian Plants:** I. Endersby reported that the Society for Growing Australian plants were not holding an exhibition next year but will notify our Society of their next exhibition date when known.

**Venues to Promote the Society - Garden Week:** P. Carwardine reported that Garden week will be held next April at the Royal Exhibition Buildings. Council will approach R. Field and Corporate Affairs regarding the possibilities of our Society in taking part next year.

**Venues to Promote the Society - Australian Entomological Society Annual Scientific Conference 1997:** Council agreed to contact the AES to offer assistance at their Scientific Conference.

**Council of Adult Education:** I. Endersby reported that the title for the CAE course will be: "Insects For Beginners" the course will be advertised as part of a newspaper supplement.

**New Front Cover Illustration:** D. Dobrosak agreed to contact entomological illustrators to request an Odonata illustration for next years cover of *Victorian Entomologist*.

**Speakers Program:** The speakers program for next year was discussed. It was agreed to approach M. & P. Coupar to give their talk in February or April 1997. I. Endersby offered to present a talk on Odonata early next year. A. Kellehear indicated that his Presidential Address, in June 1997 would be titled "The Romance of Insects in European Art". D. Dobrosak agreed to investigate the possibility of holding an October meeting/excursion to the Institute for Horticultural development.

**Deferred Topics:** Discussion on the subject of the Society's Committees and life membership was deferred until the next Council meeting

**ENTRECS:** The following motions were voted on in response to discussions at the October General Meeting:

#### Motion 1

The Council of the Entomological Society of Victoria agrees to release ENTRECS data to Paul Gullan for use in the next edition of his Butterfly CD ROM with the following qualifications:

1. That the rights are non exclusive
2. That data will not be released from members who decline to have their contribution included.
3. The Society's name and that of ENTRECS is duly acknowledged.

(D.Dobrosak/I.Endersby) Carried

#### Motion 2

That the release of the data will be delayed until the 31st March 1997 to allow dissenting contributors to notify the Secretary.

(P. Carwardine/R MacPherson) Carried

**Le Souëf Award:** The Le Souëf Award Committee advised Council that an award will be made this year and the recipient announced at the December meeting.

**December meeting:** Members and visitors are cordially invited to the traditional December "Members Night". Members are invited to present short talks and/or show slides of interest. Other members who are able to present a short talk or slide presentation (10 to 15 minutes) will be most welcome. Please co-ordinate with the Secretary prior to the night. Coffee, tea and light refreshments will be provided after the meeting. At present the topics of the night will include:

- Display of slides on Odonata by I. Endersby.
- Insect Shell Cards by A. Kellehear.
- A segment on identification of the insects collected during the Kinglake Excursion/Survey and general de-brief of the survey.

The meeting was closed by the President at 9:42

### REPORT BY THE SOCIETY'S REPRESENTATIVE TO THE AUSTRALIAN ENTOMOLOGICAL SOCIETY

**MYRMECIA.** The Australian Entomological Society's news bulletin (Vol 32, Pt3, Aug 1996) contained the following points of interest:

Results of Survey The bulletin surveyed members and found the following: low response of 22% (173); females more likely to be working part-time (in entomology?); 84% of male responders employed in entomology; no females earn >\$70,000, whereas about 23 males did!; and most entomologists are employed in Government (State & Federal) agencies.

Regional News Inputs (by State) were shown from Research Institutes, University Departments, Primary Industry and Agricultural Departments, Museums, Quarantine Review Committee, Overseas Bodies - NZ and PNG; Entomological Society of Queensland. None from Entomological Society of Victorian to date!

Reports by FASTS (Federation of Australian Scientific & Technological Societies) - mainly concerned with Government perceived funding cuts in upcoming Budget and policy reviews.

Coming Events Thrips ID (Canb April 97); Whiteflies ID (Canb Dec 96); Collembola biology & ID (Canb Feb 97); 9th Intl Aucheb'norrhyncha Congress (Syd Feb 97); Workshop of Soil Invertebrates (Bris Jul 97); Congress of Acarology (Canb Jul 97). Further details available from Ray MacPherson, Representative Councillor.

Post Graduate Projects in Entomology A listing of 208 entries covering Australia for 1996.

Ray MacPherson

## BOOK REVIEW

"Name that Insect: a guide to the Insects of Southeastern Australia" by T.R. New

Oxford University Press, Melbourne. vi + 194 pp., 73 figures, 197 x 130 mm, Paperback, ISBN 0 19 553782 3 rrp: \$19.95

In the preface to his fourteenth book, *Name that Insect*, Tim New states " ...well over 100,000 distinct species of insects occur in Australia ... and only about half of these have been even described and given formal scientific names ...[so] ... the reader should not expect too much - this book is not an all-informative identification guide ... that would at present be impossible to complete. I try to provide guidelines for recognising the main kinds of insects in the region, including selected species of all orders ...selecting examples for inclusion is inevitably idiosyncratic...". For such a forbidding task this is not an unreasonable set of caveats.

A quick flick through the plates shows that the technique employed is to use the general shape of each example for identification, often using silhouettes so that unimportant features do not distract the reader. These silhouettes are supplemented with diagrams of wing venation when appropriate and enlargements of other useful diagnostic characters. The text amplifies the diagrams and provides relevant biological and behavioural information. Some technical terms are inevitable and so chapter 1 includes an introduction to insect structure and life histories and a glossary summarises most of the specialist vocabulary.

Chapter 2 discusses insect diversity including comments on biogeography, various habitats, some evolutionary trends and the challenges of invertebrate conservation in the region. In Chapter 3 the question is posed *Why name insects?* and answered in terms of the need to recognise pests and predators, the use of insects in conservation planning either as vulnerable or indicator species, and their contribution to our knowledge of ecological processes. Then the identification starts:

In 68 couplets a conventional key identifies adult and larvae of all orders represented in the area and in some cases distinguishes lower taxa. It is cross-referenced to nine plates of silhouettes, most in dorsal view, and one which gives characteristic resting positions of typical insects. The key is comprehensive and works for the examples that I tried but there are a number of errors in the labelling of the plates. In fact this is my major criticism of the book and all of those errors which I located are appended. Seven chapters follow which discuss the orders, mostly grouped according to systematic similarity. There are no further keys and I can understand why. By modifying a European key to beetle families I was able to cover those 18 families out of Australia's 117 which comprise 70% of the species presumed in CSIRO's *Insects of Australia* classification table. A similar exercise for Hemiptera gives the 25 families out of 99 which also include 70% of the species. However I would never use them in public as these partial keys can cause more confusion than enlightenment. Does a species from a family not included key erroneously out to an included family or does it (rightly) fail all couplets? - one never knows.

For each Order Dr. New describes the general characteristics which distinguish it and those elements of its biology which are important for identification or of ecological interest. Then, using his specific examples, he subdivides the group into sub-order, super-family or even family depending upon the diversity within the order. Because there is no key to systematise your search the best plan is to read the chapter as a whole, absorbing a wealth of information and giving you the perspective to place your specimen in a lower taxon. There is no doubt that this book provides much information on insect identification in a more readily accessible format than was previously available. Not only is it more accessible but it is correct, relevant and useable.

I have a few criticisms. Too many errors in plate labelling have slipped through the proof reading. Secondly, it would have been appropriate, I believe, to give some further reading guidance other than CSIRO's mighty tome. There are good texts now available on insect groups (butterflies, moths, dragonflies, beetles, orthopteroid orders, adult trichoptera, ants) that would enable the readers to further their particular interests. Next, the glossary, which should not be allowed to grow too big but should contain a few more terms. "Hypognathous" is mentioned but "prognathous" is not. These terms are used throughout many orders and a diagram and glossary reference would have been of value. Also "aroleum" from key couplet #60 and "gular" from couplet #64 would help. In figure 32 a pointer to the "pterostigma" would assist those readers who are new to wing venation. Finally, the diagrams and here we enter the contentious area of set versus natural poses. Most of them show the specimens in dorsal view as they would be set within a pinned collection. This book is aimed at students, teachers, naturalists and other interested people and their first sighting will probably be of an insect in its natural habitat, not a museum case. Some moth families, for example geometrids, pyralids, tortricids, rest in distinctive poses or have shapes which are readily recognisable. The ant *Leptomyrmex erythrocephalus* (Fig. 73h) has such long legs that its body seems to hang at a level below the joint between tibia and femur. I would like to have seen those groups where a natural representation gives more information than the set specimen portrayed as such.

In summary, you should buy the book and pencil in the corrections. The information is good, it works, you won't find such a relevant compilation in this format anywhere else and I am sure that the author has argued strongly with his publisher to keep the price at a reasonable level.

- p. 29, fig. 29 (g,h) should read (i,g) and is "l" really a pompilid?, using this book I would have identified it as a sphecid.
- p. 31, couplet 5 Dermaptera (Fig. 6a) should read Fig. 6q
- couplet 10 Diptera (Fig. 80, p) should read Fig. 8p
- p. 33, couplet 23 Mecoptera (Fig. 7a) should read Fig. 7q
- p. 34, couplet 37 Lepidoptera (Fig. 8a) should read Fig. 8q
- p. 36, couplet 67 Dermaptera (Fig. 6a) should read Fig. 6q
- p. 48, fig. 16 (b) and (d) are *Ischnura aurora* and (e) and (c) are *I. heterosticta* so (d) should read (f); (e) should read (g); and (f) should read (h). The text gives the correct information.
- p. 67, last line *Australostoma* Figure 28h should read Fig. 28b
- p. 82, first line *Ricinus* (Figure 33a) should read Fig. 33c
- p. 111, fig. 47 (b) *Geophilus* should read *Creophilus*
- p. 134, fig 58 "f" should be inserted against *Chironomus* larva
- p. 136, line 7 *Melangyna* (Figure 55a) should read Fig. 55c
- p. 146, fig. 64 (g) should read *Spilosoma glatignyi* and (h) should read *Trapezites symmomus*
- p. 150, para 3 (the Bogong moth, Figure 64g) should read Fig. 64j
- para 5 (...diffuse forewing marks, Figure 64f) should read fig. 64g
- p. 152, line 7 (*Symmomus* skipper, Figure 64g) should read fig. 64h
- p. 162, para 2 *Rhyssa persuasoria* (Figure 68a) should read Fig. 68c

Ian Endersby



THE TROIDINE FEMALES' GUIDE TO DATING A 'SENSITIVE NEW AGE'  
BUTTERFLY - HETEROSPECIFIC LEPIDOPTERAN MATINGS, AND AN  
OBSERVATION OF AN APPARENT MASS LYCAENID COURTSHIP DIRECTED  
TOWARDS A FEMALE PIERID.

Kelvyn L. Dunn

15 Yackatooon Road, Upper Beaconsfield Vic. 3808

**Summary:** Speculation and discussion are given to some interesting lepidopteran heterospecific matings in the literature with attention directed to Valentine's (1996) recent observation of a troidine's inter-tribal mating in Queensland. In addition, an unpublished personal observation of an inter-generic mating between *Plodia* and *Ephesia* (Pyralidae) is documented, and an unusual observation of an apparent mass courtship of a female pierid butterfly by several conspecific male lycaenids is detailed.

I was most interested to read in the August issue of the *Vic. Ent.* of Peter Valentine's (1996) remarkable observation of a natural inter-tribal papilionid mating between a male *Papilio aegeus* and female *Troides priamus euphorion* in Townsville. Documented natural matings between distantly related species of butterflies such as these are rare (Calhoun 1990), and records of wild caught adult progeny resulting from any natural cross are very rare (Smart 1975).

After some 20 years of serious collecting, I have only once observed a (seminatural) cross-pairing among the Lepidoptera. On 20 November 1989, I encountered an inter-generic mating between two phycitine pyralid moths - a male *Plodia interpunctella* (Hubner) copulating with a female of *Ephesia elutella* (Hubner). Populations of these pyralids had, undesirably, infested the Biosystematics Unit at the former Plant Research Institute (PRI) at Burnley Vic. Both species are cosmopolitan pests of stored grain (Common 1990) and, not without some dismay, larvae of *P. interpunctella* were found to have been consuming various pinned pyralid moths in a metal collection drawer! Both sexes of *P. interpunctella* were flying in fair numbers in the laboratory at the time of the observation, but adults of *E. elutella* were scarce. Subsequent fumigation resulted in no further observations of either species. The pair is preserved in *copula* in the Victorian Agricultural Insect Collection at IHD, Knoxfield.

Under laboratory conditions, Grant *et al.* (1975) found males of *P. interpunctella* to be strongly excited by females of *Cadra cautella* (Walker), a member of a phycitine genus allied to *Ephesia*. Although male *Plodia* courted *Cadra* females in the calling position vigorously, they were rejected sooner or later in the courtship sequence because of behaviour or sex pheromones inappropriate to *C. cautella*. Later, Brower (1977) conducted hybridization trials in all possible combinations between *P. interpunctella* and then four species of *Ephesia* (two of which are currently placed in *Cadra* (Nielsen *et al.* 1996)), including *E. elutella*, to determine the feasibility of producing sterile hybrid progeny for release into native populations for autocidal control. Although eggs from various crosses were laid, none was fertile. Brower discovered that when mixed copulations between these phycitine genera occur mechanical and physiological barriers operate which prevent insemination.

Several natural inter-generic copulations have been documented amongst North American lycaenid and nymphalid butterflies. In Washington, Frechin (1969) encountered a male of *Plebejus icarioides* with a female *Everes amyntula* (both Lycaenidae) and, in Colorado, Jac (1972) recorded a male of *Chlosyne gorgone* with a female of *Melitaea pola* (both Nymphalidae). Both mating pairs were observed in flight, and in each case the female member was the carrying partner. Frechin commented the female *Everes* was the only example of its species within a population of *Plebejus*. In addition, Calhoun (1990) discussed two natural inter-generic matings between lycaenids in Florida; a pair in *copula* was illustrated. Observed

eight years apart, and at the same locality, both pairings involved a male of *Fixsenia favonius* and female of *Calycopis cecrops*.

No doubt natural pairings between closely related species are more frequent than inter-generic crosses. Heterospecific matings probably occur more frequently amongst sibling species, particularly those which are largely allopatric or usually parapatric, but also happen in localised areas within the ranges of broadly sympatric taxa (see Woodruff 1973 for discussion on hybrid zones). Recently, Warren and Robbins (1993) reported a presumed hybrid between two sympatric species of *Callophrys* (Lycaenidae) in Colorado, and Downey (1962) listed three other examples of inter-specific matings amongst North American lycaenids, one then unpublished and two from earlier literature. In addition, butterflies of the North American nymphaline genus *Limenitis* readily undergo congeneric inter-specific hybridization both in the wild and laboratory (Platt *et al.* 1978). Ritland (1990) recorded seven *Limenitis* hybrid individuals in a 13 month period in 1986-87, as well as two cross matings between *L. achippus* and *L. arthemis astyanax* in Florida. In northern Florida and southern Georgia, a unique combination of ecological and biogeographical (genetic) factors apparently interact locally to weaken premating reproductive barriers in these two sympatric species.

Repeat observations, such as those of Calhoun (1990) and Ritland (1990), suggest that localised breakdown in species' premating, reproductive-isolating mechanisms can occur periodically, or mating errors are a little more regular than supposed? Indeed, the latter view was suggested by Downey (1962). Founded on the observations of W.G. Wright at the turn of the century, the probability, or numerical value of the likelihood of an inter-specific (not inter-generic or beyond) mating event taking place, is estimated somewhat subjectively at 0.01429 based on a single such instance recorded among 70 copulations noted by Wright over a five year period (see Downey for discussion). Moreover, the chance capture of purported hybrid individuals, which are occasionally reported in the literature, adds weight to this view. Smart (1975) discussed one such intriguing wild caught Peruvian (congeneric) hybrid between *Callocore cynosura* and *C. pastazza* (Nymphalidae). The illustrated adult showed characters of both parents, a trait of confirmed lepidopteran hybrids (Sands & Sawyer 1977, Carr 1984), and a factor identifying it as of hybrid origin. Based on probability, the random capture of such an individual must imply that heterospecific matings occur with some regularity where related species' habitats overlap. Such events are more likely to happen when the vertical and/or horizontal microhabitat partitioning is disturbed. Frequent inter-specific hybrids in greenhouse cultures of *Heliconius* (Nymphalidae) support this (Gilbert 1984).

The significance of hybridization between allegedly different taxonomic groups cannot always be accepted at face value. In some cases ready pairing (and production of fertile offspring) between then supposedly different allopatric species, such as *Papilio fuscus* and '*P. canopus*' in northern Australia, brought their specific recognition into disregard (Dunn & Dunn 1991). Moreover, Sands and Sawyer (1977) gave a curious account from Papua New Guinea of a natural copulation between troidines of then different genera from which two male hybrid progeny were reared. *Ornithoptera* has since been synonymised with *Troides* (Miller 1987) reducing slightly the significance of this account to that of a congeneric mating error, similar in rank to those natural birdwing crosses reported by Haugum and Low (1978-79).

In addition to reports of natural cross matings among the Lepidoptera occurring at congeneric, inter-generic and inter-tribal levels, such as those already discussed, there are writings of fascinating copulations between butterfly subfamilies, sometimes families and (under seminatural conditions) even between superfamilies! Within the Papilionoidea the published accounts (I have examined) of generic, tribal, subfamilial and familial cross matings involved species of Lycaenidae, Nymphalidae and occasionally Papilionidae (cg's. Arnold 1986, Calhoun 1990, Downey 1962, Frechin 1969, Jac 1972, Rausher 1983 and Valentine 1996).

Arnold (1986) illustrated a natural subfamilial lycaenid cross mating pair involving a female *Euphilotes battoides* (Lycaeninae) and a male *Apodemia mormo* (Riodininae) from California USA. The mated female was later recognised ovipositing but eggs collected and dissected were not viable. As well as citing three examples of lycaenid inter-specific matings involving congeners of *Callophrys*, *Lycaena* and *Plebejus*, Downey (1962) recorded an astonishing interfamilial mating between a male 'Pearly Checkerspot', *Chlosyne gabbii acastus* (cited as "*Chlosyne c.f. acastus*") (Nymphalidae) and female of the 'Lustrous Copper', *Lycaena cupreus snowi* (Lycaenidae). Even more astounding is the account by Newman (1946) of a bizarre homosexual mating between two superfamilies (Papilionoidea and Sphingoidea) at Kent, UK. Under artificial illumination, in a greenhouse, the freak pairing occurred between a male sphingid moth (*Smerinthus populi*) and a male papilionid butterfly (*Papilio machaon*). Without doubt the flood lighting contributed to the confusion which, otherwise, would never happen because of their temporally disparate behaviours.

Rausher (1983) illustrated an inter-tribal papilionid mating between a male *Eurytides marcellus* (Graphiini) and a female of a 'New World Birdwing', *Battus philenor* (Troidini) from Texas USA. From the photograph the female troidine appears the carrying partner. The recent cross-mating observed by Valentine (1996) also involved equidistantly related papilionids (a male of Papilionini with a troidine female; likewise, the latter was the carrying partner). Both tribes in each copulation were infrasubfamilial (Papilioninae). In common with Rausher's and Valentine's records, Sands and Sawyers' (1977) observation involved a troidine female, indeed that of *Troides priamus* - the same species recorded by Valentine in Australia. Perhaps female troidines represent a group in which there has been a lowering of the barrier in premating strategies, or in which species recognition has not yet become completely isolating?

At the species level, Ritland (1990) pointed out that comparative rarity of particular taxa must effect the economics of mate choice and suggested that such constraints could result in lessened discrimination. Observations by Frechin (1969) and Valentine (1996) support this. If it is at all possible to extrapolate this theme to higher taxonomic levels, then in terms of world distribution the Troidini seems a scarce group relative to the cosmopolitan Papilionini. Hence, troidine females, in particular those of *T. priamus* and other allied ornithopteran birdwings, may be (in evolutionary terms) less discerning when it comes to choosing a mate? In support of this, Hancock (1991) documented a number of potential hybrid birdwing specimens and apparent hybrid populations in the wild which may owe their origins to ancient cross-matings (eg. *T. rothschildi*).

Birdwings are patrolling species and so would be expected to be mated quickly, unlike females of perching species which must seek rendezvous sites (eg. a distant hilltop) for copulation. Indeed, males of the Australian 'Greasy Birdwing' *Cressida cressida* are rapist (Orr 1988) suggesting that, in this troidine at least, virgin female discernment is not a limiting factor in mate selection. In other Papilionidae (eg. *Parnassius*) females which have remained unmated for many days will fly towards passing males to seek a mate, a behaviour not shown by younger virgin females (Scott 1973). Valentine (1996) commented that the female birdwing "seemed to be interested" in the mistaken mate! Presumably the female birdwing had become 'desperate' (to pardon the anthropomorphism) following Scott's general pattern for long unmated virgins - albeit to the extreme! The female *T. priamus* reported by Sands and Sawyer (1977) accepted the courting, black fore-winged, *Troides oblongomaculatus*, and perhaps the analogous black forewings of the male *P. aegaeus* (in absence of a conspecific) provided a false generic visual cue and created confusion. Hence, she elicited fluttering courtship flight (Valentine 1996) with what may have been interpreted as a closely related troidine with which she could possibly still interbreed? Current phylogenetic studies regard the black and gold *Troides* group and green and gold *Ornithoptera* group to have evolved from ancestral birdwings of the *Trogonoptera*

group (Hancock 1991). Perhaps some females retain ancestral acceptance of alternative patterns now confined to divergent groups?

Because the butterfly visual system responds maximally to colors approximating the wing pigmentation of the species (Silberglied 1984), some male butterflies may attempt to court very distantly related species which show similar colors to that of their own female, sometimes in spite of major differences in size! Usually, because of impracticable constraints or refusals, matings do not take place. However, concerning Valentine's (1996) observation the female birdwing has some basic brown and pale colors vaguely in common with *P. aegaeus* but otherwise does not resemble the female of the latter.

I do not know of any accounts of natural cross pairings involving *P. aegaeus* and allied sympatric taxa such as *P. ambrax*, *P. fuscus* or even *P. ulysses*, heterospecific combinations one might expect to see rather than what Valentine (1996) encountered. Perhaps the legendary "red *P. ulysses*" rumoured to have once been seen near Cairns in northern Queensland had its origin in such a cross? Forced paired hybridization experiments between *P. aegaeus* and *P. fuscus* produced sterile males and crippled females (Straatman 1962). However, as the rutaceous larval hosts of *P. aegaeus* are not shared with the Troidini no similar experiment have been attempted with birdwings!

Finally, I will now diverge somewhat from cross-matings to recount an unusual apparent courtship interaction I observed in south-eastern Queensland between a female *Appias paulina* (Pieridae) and several males of *Psychonotis caeli* (formerly *Danis hymetus*) (Lycaenidae).

At Griffith University, Nathan campus, at 1:30pm EST on 5 March 1993, during overcast weather and a shade temperature of 28°C, I noted many males of *P. caeli* patrolling beneath dry vine thicket canopy. As I watched a freshly emerged female of *Appias paulina*, seemingly looking for a site to rest in deep shade or perhaps seeking larval host plants (if already mated), appeared some 40 metres away. She was flying between understorey vegetation, about 1-2 metres above ground, and heading in my direction. Upon entering the area where *P. caeli* was localised, the *A. paulina* female was inundated by males of this lycaenid for a period of about 3 minutes (timed). She fluttered about slowly and irregularly, covering a distance of only about 30 metres from commencement of the initial interaction. It seemed about 8-10 males were involved - it was difficult to count them exactly given their continual movement like a cloud or swarm flying within 20-30cm above and behind the fluttering pierid. The female pierid did not settle in a standard refusal position which suggests she did interpret the lycaenid behaviour as courtship but perhaps harassment? (the female pierid's weaving flight may have been an attempt to evade the lycaenid attention). She continued her beneath canopy flight and eventually out flew the males before vanishing from the area.

About 10 minutes later the female *A. paulina* reappeared to attract only a single *P. caeli* male. The male was patrolling air space a metre away from her as she passed by. Upon very close approach this male lost interest immediately and returned to his patrol.

Because of the slow general mass movement of the lycaenid swarm hovering above and behind the female, I interpreted this behaviour to be a group courtship attraction (from the lycaenids' perspective only) to a more or less indifferent pierid butterfly. The female pierid's slow fluttering flight may have resembled receptive behaviour of a super-female lycaenid. However, part of this interaction may have involved aggressive territoriality between some males of *P. caeli*, one or more of which initially followed sexual cues in seeking out the black, yellow and white female pierid (the basic colors and patterns of the female of the lycaenid species also). Heterospecific attraction is frequent in courtship behaviour but this normally lasts only momentarily after adults are in close range (Rauscher 1983). In this lycaenid-pierid example I was intrigued that the attraction was prolonged and also by the number of males involved.

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## CRANBOURNE EXCURSION

Three members attended the insect survey excursion held at the Royal Botanic Gardens Annexe, Cranbourne on 26 October. *Leptospermum ericifolia* and *Ricinocarpus pinifolius* Wedding Bush were in flower but, as the day was generally overcast, they had not attracted many species.

Future surveys will follow the same route to gain some idea of the variation over the seasons: From the Stringybark Picnic Area follow the Arboretum Track to Tea-Tree Track and thence to the Trig Point Lookout. Check the Perched Swamp as you pass if you have an interest in the aquatic insects. From the Lookout return via Possum Gully Track and Manna Gum Track. Members are encouraged to survey this transect and submit their observations at times to suit themselves as well as during any formal excursion to the site. Maps are available at the picnic ground.

### Species observed:

#### ODONATA

##### Zygoptera

Lestidae                      *Austrolestes leda*

##### Anisoptera

Corduliidae                *Hemicordulia tau*

Libellulidae               *Diplacodes bipunctata*

#### COLEOPTERA

##### Adephaga

Dysticidae                ?*Hyderodes* sp.

                                  ?*Liodes* sp.

##### Polyphaga

Hydrophilidae            ?*Anacaena* sp.

Melyridae                 *Carphurus* sp.

Tenebrionidae            *Adelium* sp.

*Lepispilus sulcicollis*

Chrysomelidae           *Eurispa* sp.

#### LEPIDOPTERA

##### Pieridae

*Delias aganippe*

*Delias harpalyce*

*Pieris rapae*

Nymphalidae             *Vanessa kershawi*

*Vanessa itea*

*Tisiphone abeona albifascia* (larvae)

Lycaenidae               *Candalides hyacinthinus hyacinthinus*

*Zizina labradus*

#### HYMENOPTERA

Ichneumonidae          *Eissopimpla excelsa*

Formicidae               *Myrmecia* sp.

Apidae                    *Apis mellifera*.

Thanks are due to Tony Morton (Lepidoptera) and Ian Faithfull (Coleoptera, Hymenoptera)

## ADDITIONAL LOCATIONS AND FIELD NOTES FOR *ZETONA DELOSPILA* (WATERHOUSE).

P.S. Valentine, Tropical Environment Studies & Geography  
James Cook University, Townsville, Q4811

The life history and other biological and distributional notes for *Zetona delospila* (Lepidoptera:Lycenidae) were recently described (Braby, 1995). These notes provide additional field observations not included by Braby. In addition to the five locations for *Zetona delospila* identified by Braby, the following observations are noteworthy:

- (i) Lawn Hill Gorge, adults hill topping on spinifex ridge, 29.ix.1986. This location is 80 km west of Gregory Downs (in the Gulf of Carpentaria region), about 140 km north of Camoowal. This is the western limit within Queensland.
- (ii) Adults flying in open country, 15 km NE Lake Buchanan, 12.ii.1993. This location is approximately 200 km south of Charters Towers and is the southern limit now known for the species.
- (iii) Adults abundant and females ovipositing on *Cassytha* sp. sandstone ridges near Fairlight station 29 km North of Palmerville; 16.iv.1995; 12.xii.1995. This area is around 30 km from a previously known site 30 km west of Fairview.
- (iv) Adults abundant and some hill topping, sharp peak, 31 km SE of Greenvale, 15.ii.1996.

These records add significantly to the known range of this small lycaenid in Queensland. In all cases spinifex plants were present, usually in great numbers. At Fairlight the species is extremely abundant and all ridges climbed had large numbers of adults flying.

### References

- Braby, M.F. 1995 The life history of *Zetona delospila* (Waterhouse) (Lepidoptera: Lycaenidae), *The Australian Entomologist* 22(2):37-42.

### NEW ADDRESS:

Peter Carwardine wishes to inform readers that his new address is: 5/154 Grange Road  
GLEN HUNTLY VIC 3163

## OBITUARY

### Frank Noelker

On Monday 20th May 1996, in the early hours of the morning, Frank Noelker died at his loved home near Lake Hindmarsh in north-western Victoria. He was aged 57 years.

After leaving Murtoa High School at the age of 15 Frank commenced a career with the State Savings Bank of Victoria. This Culminated with him becoming the manager of the Rainbow branch from 1974 to his retirement in 1993.

However, Frank's primary interest was natural history. It was in this area that he made a major contribution by helping many individuals and organisations with a wide variety of projects on the conservation of the endangered species and threatened natural habitats. He was an active member of the Victorian Conservation Trust, the Royal Australian Ornithologists Union, the Mid Murray Field Naturalists Club and the Bird Observers Club. He was chairman of the Wyperfeld National Park Advisory Committee and contributed regular articles on local flora and fauna and various conservation issues to the Rainbow Argus under the pen name of "Ogyris".

Frank had a special interest in entomology during the past 10 years which led to him making a number of significant discoveries. Some of these are as follows:

- (a) *Ipanica conigera*; Lepidoptera: Noctuidae (Agaristinae); Frank recorded this species on the 25th of February 1995, at 0.5km. west of the north end of Lake Hindmarsh. It seems that this is the first Victorian record of *I. conigera* as Common (1990), says that it "occurs in north-western Australia, the Northern Territory and eastern Australia as far south as central New South Wales, in inland areas as well as on the coast".
- (b) *Anisyntha cynone grisea*; Lepidoptera: Hesperidae; Frank discovered a population of this species at Sea Lake, Victoria, on the 22 March 1993. This record represents an intervening locality between the known occurrences at Kerang and Gunbower in the Murray Valley, Common and Waterhouse (1981), and those discovered by F. Douglas at Rainbow and Bculah during 1987 and 1990 respectively.
- (c) *Ogyris* sp. aff. *idmo*; Lepidoptera; Lycaenidae (undescribed *Ogyris* sp. currently known as the "Mildura Ogyris"); Frank's rediscovery of this species on the 18th of February 1996, at a locality in the Murray-Sunset National Park, dispelled fears that this taxon might have been extinct within Victoria. The previous record was taken by C. McCubbin at a nearby site during April 1975.
- (d) *Ogyris genoveva*; Lepidoptera : Lycaenidae; An interesting population of this species that appears to be transitional between subspecies *araxes* and *duaringa* was discovered by Frank at a locality near the eastern boundary of the Big Desert, Victoria, on the 18th of February 1989.
- (e) *Theclines thes albocincta*; Lepidoptera : Lycaenidae; Frank located a population of this species near the northern boundary of the Bronzewing Flora & Fauna Reserve at approx. 16km. south of Ouyen, Victoria, on the 29th of January 1995. This record represents a range extension of about 60km. to the east of the known occurrence at Pink Lakes in the Murray-Sunset National Park, Common & Waterhouse (1981).

Frank is sadly missed by his wife Joan, daughters Anne, Kerry, Sally and Theresa and son James as well as numerous relatives, friends and colleagues.



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Dr Alan Yen, Museum of Victoria, 71 Victoria Crescent, ABBOTSFORD VIC 3067. *Insect ecology; conservation; psyllids.*

Members, please notify any alterations or errors to the above list to the Society's Secretary.

#### EXCURSION/FIELD SURVEY TO KINGLAKE NATIONAL PARK 8th DECEMBER 1996

Meet at 11AM at the Department of Natural Resources and Environment (DNRE) Visitor's Centre/Office, National Park Road, Pheasant Creek (DNRE telephone number is 057 86 5691). The Melway Reference is Map 408 P11.

Travel to Pheasant Creek via Whittlesea, St Andrews or Dixons's Creek.  
Pheasant Creek is located between Kinglake West and Kinglake Central (Pheasant Creek is 8 km north-west of the town of Kinglake).

Bring lunch and drinks with you. Any specimens collected will be in accordance with the conditions listed in the Society's Research Permit and any members collecting specimens must do so under the supervision of the member(s) of Council, listed on the Research Permit.

## RECENT ARTICLES OF INTEREST

Compiled by Ian Faithfull

Cooper, S., 1996. Alarm at fly resistance. *Weekly Times* 25 Sept. p.5. NSW Agriculture researcher Dr Gary Levot has demonstrated that 10 of 14 commercial sheep blowfly curative dressings no longer effectively kill maggots because the flies have developed resistance to these insecticides. 98% of flies have high tolerance to organophosphates.

Hunt, P., 1996. State on alert for new pest. *Weekly Times* 23 Oct. More than 100 flower growers and Dept. of Natural Resources and Environment staff have completed a course on the identification of western flower thrips (WFT) conducted by the Institute for Horticultural Development. Only a single infestation of the pest has been detected in Victoria. From December 2 interstate quarantine measures will require that imported plants and flowers from WA, NSW and Qld are accompanied by Plant Health certificates vouching for their freedom from WFT. (cr. K.Dunn).

Hope for phylloxera spray. *Weekly Times* 2 October 1996, p.32. Glasshouse trials by the Rutherglen Institute of Integrated Agricultural Development and US chemical company Proguard have demonstrated that a new systemic spray for the grape root aphid or grape phylloxera, *Daktulosphaira vitifoliae*, is effective, but field trials have shown no effect on the aphid population or improvement in yield. Phylloxera is a threat to Victorian viticulture.

A bad year for the buzz. *Frankston Independent* 5 Nov. 1996 p.1; John Gavegan, Mozzie plague warning. Breeding conditions 'perfect' after rains. *Frankston Standard* 11 Nov., p.8. Conditions have been good for mosquito breeding in southern Victoria. Frankston Council issues advice on control and protection: empty the water out of disused tyres, re-set roof guttering, etc. The mosquito-borne Ross River Virus is the most likely disease threat but has not yet been associated with mosquitoes in the Frankston area.

Gavegan, J., 1996. Head lice terror. Call for urgent action. *Frankston Standard* 4 Nov. 1996 pp. 1, 6. Another outbreak of human head lice, *Pediculus capitis*, this time at Frankston area primary schools, with "hundreds of children badly infested". "Over the past three to four weeks, it's become rampant ... scalps "literally alive" with the parasites ... some children [have] several generations of lice on their heads". Frankston Council is one of the few that still offers a head lice service after the State government abolished a subsidy in 1991.

New, T.R., Britton, D.R., Hinkley, S.D. and Miller, L.J., 1996. The Ant Fauna of Mount Piper and its Relevance to Environmental Assessment and the Conservation of a Threatened Invertebrate Community. Dept of Natural Resources and Environment, Flora and Fauna Technical Report No.143.

Recovery Plan, Research Phase, for a Threatened Butterfly Community. Dept of Natural Resources and Environment, Flora, Fauna and Fisheries Division, Endangered Species Program, Project No.392. More work on Mt Piper.

Goodman, R. and Hepworth, G., A Survey of Feral and Managed Honeybee Colonies in the Goulburn Valley Victoria. Horticultural Research and Development Corporation Project AP 415.

Horne, P.A. and Crawford, D.J., 1996. Backyard Insects. The Miegunyah Press at Melbourne University Press, Carlton South. 18.5 x 20 cm, 232 pp., 128 colour plates, RRP \$24.95. The

cover blurb states that this "guide ... allows anyone to recognise the insects that we most often find in Australian cities". The pictures, mostly taken by Dennis Crawford, occupy alternate pages, each accompanied by a page of a simple text for novice entomologists. The identifications are mostly to species level but some only to subfamily, etc.

**Insect boy.** *Helix* (bimonthly magazine of the CSIRO Double Helix Science Club) No. 50, October-November 1996, p.9. Nine year old Paul Hasenpusch has found two new species of Buprestidae including *Castiarina paulhasenpuschi* (described in S.Barker's paper below), a new ant sp., a new phasmatid and the "Mt Lewis monster". The 3-4 cm long "monster" is superbly camouflaged and belongs to a new grasshopper genus. Paul's parents, Jack and Sue, own and operate the Australian Insect Farm at Innisfail, Qld.

Hawkeswood, T.J. and Furth, D.G., 1994. New host plant records for some Australian Alticinae (Coleoptera Chrysomelidae). *Spixiana* 17(1): 43-9. New records for 12 spp., discussion of existing biological data and host records. (cr. T.Hawkeswood).

Barker, S., 1996. Seventeen new species of *Castiarina* (Coleoptera: Buprestidae). *Transactions of the Royal Society of South Australia* 120(2): 41-59. Spp. mainly from Western Aust. and N.Qld. Ten spp. associated with the *Castiarina parallela* complex in WA. Specimens of *C. paulhasenpuschi* were captured using a colour lure in an area where no plants were flowering, a technique not used before for the capture of *Castiarina*. (cr. S.Barker).

Heard, T., 1996. Stingless bees. *Nature Australia* 25(6):50-5. Native *Trigona* and *Austroplebia* sweat bees (Apidae: Meliponinae) are social insects which store pollen and honey in complex nests which can be established in artificial hives. Illustrated descriptions of nests and hives. Harvesting the honey; swarming; communication; resin collecting; dispersal of seed of *Eucalyptus torelliana* by *T. carbonaria*.

McGhee, K., 1996. Life in a slit without silk. *Nature Australia* 25(6):10-11. Instead of using its own silk, the spider *Fissarena ethabuka* uses sand crusts held together by filamentous remains of cryptophytic plants to support the walls of its slit-like burrows in sand dunes. (Henschel, J.R., Davies, V.T. and Dickman, C.R., 1995. The slit spider (Araneae: Clubionoidea) that constructs fissures in the sand dunes of the Simpson Desert, central Australia. *Journal of Natural History* 29:137-45).

Thanks to T.Hawkeswood, S.Barker and K.Dunn for contributions.

Please forward material suitable for inclusion in "Recent Articles of Interest" to the compiler at 5/30-32 Finlay Street, Frankston, Vic., 3199. Of particular interest is the more ephemeral literature: articles in local newspapers, pamphlets, etc., and material with direct relevance to entomology in Victoria.

*Christmas Greetings to all Members &  
Readers and a Prosperous New Year!*

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The Society welcomes contributions of articles, papers or notes pertaining to any aspect of entomology for publication in this Bulletin. Contributions are not restricted to members but are invited from all who have an interest. Material submitted should be responsible and original. The Editor reserves the right to have articles refereed. Statements and opinions expressed are the responsibility of the respective authors and do not necessarily reflect the policies of the Society.

Contributions may be typed on A4 paper or *preferably* sent to the Hon. editor on an IBM formatted disk in *Microsoft Word for Windows 2.0*, *WordPerfect* or any recognised word processor software with an enclosed hard copy. Contributions may also be E-mailed to Internet address: [dobrosak@werple.net.au](mailto:dobrosak@werple.net.au) When E-mailing, indicate italicised or underlined text by including a suitable ASCII character (e.g. \*) before and after the relevant text or preferably send files as "uuencoded" text.

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## DIARY OF COMING EVENTS

Excursion/Field Survey to Kinglake National Park 8th December 1996. 11AM  
(refer Page 122)

Friday 13 December Members Night  
(refer Page 108 for details - light refreshments will be provided)

Friday 16 February General Meeting

Scientific names contained in this document are *not* intended for permanent scientific record, and are not published for the purposes of nomenclature within the meaning of the *International Code of Zoological Nomenclature*, Article 8(b). Contributions may be refereed. Authors alone are responsible for the views expressed.